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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,602	04/22/2004	John Clark Hubbert	36032/107	6864
36122	7590	08/02/2005	EXAMINER	
SETTER OLLILA, LLC 2060 BROADWAY SUITE 300 BOULDER, CO 80302			BARKER, MATTHEW M	
			ART UNIT	PAPER NUMBER
			3662	

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/829,602	<b>Applicant(s)</b> HUBBERT ET AL.	
	<b>Examiner</b> Matthew M. Barker	<b>Art Unit</b> 3662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/22/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____   | 6) <input type="checkbox"/> Other: ____                                     |

## DETAILED ACTION

### *Information Disclosure Statement*

1. The Information Disclosure Statement is incomplete. Reference number 3 is missing the date. The date of the 31<sup>st</sup> International Conference on Radar Meteorology, August 10, 2003 is read to be the date of publication as shown at the following website.  
[http://ams.confex.com/ams/32BC31R5C/techprogram/paper\\_64440.htm](http://ams.confex.com/ams/32BC31R5C/techprogram/paper_64440.htm)

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-3, 5-9, 11-13, 15-19 are rejected under 35 U.S.C. 102(a) as being anticipated by Hubbert et al.

Regarding claims 1 and 11, Hubbert et al. discloses the claimed first and second series of pulses having orthogonal polarizations (Section 4). The series of pulses have the same pulse repetition time (Figure 3, T). The first and second series are offset by a time amount ( $T_1$ ). The radar system processes the echoes produced by energy from the pulses reflected off the target to determine a range and velocity of the target.

Regarding claims 2 and 12, Hubbert et al. discloses the claimed alternating blocks of pulses (final paragraph).

Regarding claims 3 and 13, Hubbert et al. discloses the claimed phase coding and phase coding decoding (Section 4).

Art Unit: 3662

Regarding claims 5, 6, 15, and 16, Hubbert et al. discloses the claimed processing of echoes to determine the velocity and range of the target.

Regarding claims 7 and 17, Hubbert et al. discloses a pulse repetition time of three milliseconds (Section 4).

Regarding claims 8 and 18, Hubbert et al. discloses a time amount of 100 microseconds (Section 4).

Regarding claims 9 and 19, Hubbert et al. discloses the target comprises an atmospheric structure (Section 4).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hubbert in view of Smith (6,204,810). Smith teaches that using orthogonal polarizations aligned parallel and perpendicular to the earth's surface is a known practice in the art. It would have been obvious to modify Hubbert to use the alignment taught by Smith as a well known method of implementing Hubbert's broad teaching with no new or unexpected results.

6. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hubbert. While Hubbert does not specify that the radar system is a Doppler weather radar system, it would have been obvious to use the technology in such a

Art Unit: 3662

capacity in order to improve estimation of the range and velocity of atmospheric structures.

**Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hager, Siegal et al., and Cornelius et al. relate to pulse Doppler radar. Alford et al., Sauvageot et al., and MacKey et al. relate to dual polarization radar.
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew M. Barker whose telephone number is (571)272-3103. The examiner can normally be reached on M-F, 8:00 AM-4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571)272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*MB*

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